



Investment Analysis Customer Satisfaction Survey

Joint Resources Council

**NAS Configuration Management and Evaluation Staff
Program Evaluation Division (ACM-10)**

Report #2000-11

April 5, 2000

EXECUTIVE SUMMARY

In an on-going effort to improve the investment analysis function, the Program Director for the Investment Analysis and Operations Research Division, ASD-400, (Investment Analysis Division) asked the Program Evaluation Division, ACM-10, to conduct a survey of Joint Resources Council (JRC) members. The purpose of the survey was to measure the level of satisfaction JRC members currently have with investment analysis products and processes and with the role the Investment Analysis Division performs in developing these investment analysis products.

Survey questions were developed by the Investment Analysis Division with guidance from the Program Evaluation Division. The results of this survey were based on opinions obtained during interviews and do not reflect an independent evaluation of investment analysis products, processes, or the role of the Investment Analysis Division. Interview participants were limited to JRC members or their selected representatives. Interviews did not include representatives from Integrated Product Teams or members of Investment Analysis Teams.

When discussing investment analysis, it became evident that there does not appear to be a clear agreement among JRC members of what the concept of investment analysis is intended to provide. Expectations are varied. Some believe investment analysis is intended to deliver the solution. Others think investment analysis should provide the strategy for achieving a desired end result. Some believe it is just one of many decision-making tools that should be considered. Others believe it is a useful tool to support decisions, but it is not critical to making the decision itself. Some were concerned that investment analysis is being used as a substitute for systems engineering and development. Still others reported a tendency to use investment analysis as a political tool rather than a decision-making tool. Most agreed investment analysis is necessary in order to defend budget submissions to the Office of Management and Budget (OMB) and Congress. These differing views influenced interview comments and had an impact on the level of satisfaction JRC members reported with investment analysis in general. It should also be noted that JRC member comments on investment analysis were not restricted to the responsibilities shouldered by the Investment Analysis Division.

Overall Level of Satisfaction

This survey covered three areas: investment analysis products, the investment analysis process, and the role of the Investment Analysis Division. JRC members were generally satisfied with investment analysis products, including investment analysis reports and individual briefings presented prior to the investment decision meeting, but they had areas where improvements were recommended. For example, they strongly believed that the affordability and prioritization information included in these products did not provide sufficient detail to make corporate level decisions reflecting the priorities of the agency.

JRC members were less satisfied with the investment analysis processes, particularly with the timeliness of conducting the investment analysis and the timeliness of receiving investment analysis products prior to the investment decision meeting. JRC members were very satisfied with the opportunities the Investment Analysis Division offered for them to participate in investment analyses, although they cited their own resource constraints as a major obstacle to full participation. While they indicated support for the investment analysis concept, JRC members did not believe the investment analysis process has full support among all personnel throughout the agency. JRC members were satisfied with the contribution the Investment Analysis Division makes to the investment analysis process, but would like to see improvements in various areas, including communication. JRC members were particularly pleased that the Investment Analysis Division initiated this survey to determine the level of satisfaction JRC members have with various aspects of investment analysis.

An overview of the results of these interviews is shown in Table 1 below. Based on a scale from one to ten, the Program Evaluation Division followed a process of review, discussion, and consensus to arrive at combined JRC scores for individual topics. We defined a score of 1 through 4 as “dissatisfied, needs immediate attention,” a score of 5 through 6 as “needs improvement,” and a score of 7 through 10 as “satisfied.”

Table 1. Satisfaction Results

	Dissatisfied , Needs Immediate Attention (1 – 4)	Needs Improvement (5 - 6)	Satisfied (7 -10)
PRODUCTS			
Investment analysis reports			7
Affordability synopsis in reports	1		
Briefings prior to JRC meetings (pre-briefs)			8
PROCESS			
Opportunity for involvement in the investment analysis			9
Availability of resources for involvement in investment analysis		5	
Timeliness of the investment analysis	4		
Timeliness of distributing investment analysis reports		5	
Decision options		5	
Agency support		5	
ROLE OF INVESTMENT ANALYSIS DIVISION			
Investment Analysis Division Contribution			7
Investment Analysis Division Communication		5	

With some exceptions, JRC members were satisfied with the investment analysis products and with the role of the Investment Analysis Division, but they would like to see improvements in the process.

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I. INTRODUCTION

A. Background

When the Acquisition Management System was initiated in April 1996, it was designed to streamline decision making and accountability within the Federal Aviation Administration (FAA). The Joint Resources Council (JRC), which includes representatives from various offices and all lines of business within the FAA, is the senior decision-making body that makes corporate-level resource and investment decisions and establishes acquisition programs. As part of this process, investment analysis was designed to generate information for the JRC to use at investment decision to determine the best overall solution for satisfying a mission need.

Investment analysis was planned as a partnership between the sponsoring and acquiring offices and lines of business to ensure critical needs of the user and customer were satisfied by an affordable solution. Investment analysis was structured to translate mission needs into top-level performance and supportability requirements by: (1) conducting a thorough market analysis; (2) performing alternative solutions analysis; (3) developing an affordability assessment to determine the affordability of identified solutions; and (4) quantifying the cost, schedule, performance, and benefits baselines for the solutions. Investment Analysis Teams were expected to analyze viable alternative solutions to mission needs thoroughly and equally proceeding through each of these steps. The third step, the responsibility to perform affordability assessments of all candidate solutions to a mission need and to maintain a relative priority listing of all agency programs based on standard evaluation criteria approved by the JRC, is assigned to the Systems Engineering/Operational Analysis Team (SEOAT).

In an on-going effort to improve the investment analysis function, the Program Director for the Investment Analysis and Operations Research Division, ASD-400, (Investment Analysis Division) asked the Program Evaluation Division, ACM-10, to conduct a survey of JRC members.

B. Objectives

The JRC is the senior, corporate-level decision-making group for the agency. As such, JRC members are customers for investment analysis products. This survey was designed to measure the level of satisfaction JRC members have with investment analysis. The objectives, identified below, focused on three areas.

Determine the level of satisfaction JRC members have with: (1) investment analysis products, (2) the investment analysis process, and (3) the role the Investment Analysis Division performs in conducting the investment analysis and developing investment analysis products.

C. Scope and Constraints

This survey was focused on, and limited to, a review of the JRC members' satisfaction with the investment analysis products and processes and with the role of the Investment Analysis Division. The results were based on opinions obtained during interviews and do not reflect an independent evaluation of investment analysis products, processes, or role of the Investment Analysis Division. Interview questions were developed by the Investment Analysis Division with guidance from the Program Evaluation Division. Interview participants were limited to JRC members or their selected representatives. All eleven FAA offices and lines of business that are members of the JRC participated in this survey. Interview participants did not include representatives from Integrated Product Teams or members of Investment Analysis Teams.

D. Methodology

A standard set of interview questions was developed by the Investment Analysis Division with guidance from the Program Evaluation Division. (These questions are shown in Appendix A.) In addition, a one-page rating form to track six investment analysis goal areas, with a five-point rating scale, was developed exclusively by the Investment Analysis Division to use in measuring satisfaction annually for the goals identified. (This goal tracking rating form is shown in Appendix B.)

Membership in the JRC consists of the Associate Administrators representing all lines of business in the agency, including Air Traffic Services, Regulation and Certification, Airports, Research and Acquisitions, Commercial Space Transportation, and Civil Aviation Security. Membership also includes the Assistant Administrators for the Office of System Safety; the Office of Information Services; Financial Services; and Policy, Planning, and International Aviation. In addition, membership includes the Chief Counsel from the Office of the Chief Counsel. The Associate Administrator for Research and Acquisitions serves as the FAA Acquisition Executive. (JRC members are shown in Appendix C.)

The Program Evaluation Division developed a recommended list of interview candidates representing each of the offices and lines of business on the JRC. While that list included Associate Administrators and Assistant Administrators, it was not limited to individuals in those positions. The basis for recommending interview candidates was the number of Investment Decision JRC meetings attended by that individual during calendar years 1998 and 1999. If the Associate Administrator or Assistant Administrator attended Investment Decision JRC meetings during those years, that individual was requested as the primary interview candidate. If the Associate Administrator or Assistant Administrator did not attend, the representative from that office or line of business who attended the largest number of Investment Decision JRC meetings on behalf of that office or line of business was requested as the primary interview candidate. In all cases, however, the Associate Administrator or Assistant Administrator made the final selection of the individuals who represented them in the interview during this survey process. (Interview participants are shown in Appendix D.)

Interviews were conducted by the Program Evaluation Division during January and February of 2000. The Program Director for the Investment Analysis Division attended the first five minutes of each interview session to introduce the focus of the survey and highlight some of the changes being implemented within the division, but did not remain during the question-and-answer session.

At the conclusion of all interviews, the Program Evaluation Division team aggregated responses for the entire JRC and developed the ten-point rating scale shown in Table 2 below to determine the level of satisfaction for various aspects of the products, processes, and role of the Investment Analysis Division.

Table 2. Ten-Point Satisfaction Rating Scale

1	2	3	4	5	6	7	8	9	10
Extremely dissatisfied	Very dissatisfied	Dissatisfied	Slightly dissatisfied	Not satisfied; Needs improvement	Slightly satisfied, but needs improvement	Satisfied	Very satisfied	Almost perfect	Perfect

Using this scale as a point of reference, the team followed a process of review, discussion, and consensus to arrive at the overall ratings.

In addition to the combined ratings for the JRC, we identified trends and patterns specific to sponsoring and non-sponsoring lines of business where applicable. Responses for the performing line of business were combined with the overall ratings, but were not reported separately.

Sponsoring offices and lines of business were identified as:

AIO Assistant Administrator for the Office of Information Services/Chief Information Officer

ACS Associate Administrator for Civil Aviation Security

AVR Associate Administrator for Regulation and Certification

ATS Associate Administrator for Air Traffic Services

Non-sponsoring offices and lines of business were identified as:

ASY Assistant Administrator for the Office of System Safety

AGC Chief Counsel, Office of the Chief Counsel

ABA Assistant Administrator for Financial Services/Chief Financial Officer

AST Associate Administrator for Commercial Space Transportation

ARP Associate Administrator for Airports

API Assistant Administrator for Policy, Planning, and International Aviation

The performing line of business was identified as:

ARA Associate Administrator for Research and Acquisitions

The team also prepared the results of the one-page rating form developed by the Investment Analysis Division to track levels of satisfaction for six goal areas. The results obtained from this satisfaction rating form are discussed in Section III of this report.

II. RESULTS OF SURVEY

There does not appear to be a clear agreement among JRC members of what the concept of investment analysis is intended to provide. Expectations were varied. Some believe investment analysis is intended to deliver the solution. Others think investment analysis should provide the strategy for achieving a desired end result. Some believe it is just one of many decision-making tools that should be considered. Others believe it is a useful tool to support decisions, but it is not critical to making the decision itself. Some were concerned that investment analysis is being used as a substitute for systems engineering and development. Still others reported a tendency to use investment analysis as a political tool rather than a decision-making tool. Most agreed investment analysis is necessary in order to defend budget submissions to the Office of Management and Budget (OMB) and Congress. These differing views influenced interview comments and had an impact on the level of satisfaction JRC members reported with investment analysis in general. It should also be noted that JRC member comments on investment analysis were not restricted to the responsibilities shouldered by the Investment Analysis Division.

Overall Level of Satisfaction

This survey covered three areas: investment analysis products, the investment analysis process, and the role of the Investment Analysis Division. JRC members were generally satisfied with investment analysis products, including investment analysis reports and individual briefings presented prior to the investment decision meeting. However, they strongly believed that the affordability and prioritization information included in these products did not provide sufficient detail to make corporate level decisions reflecting the priorities of the agency. JRC members were less satisfied with the investment analysis processes, particularly with the timeliness of conducting the investment analysis and the timeliness of receiving investment analysis products prior to the investment decision meeting. JRC members were very satisfied with the opportunities the Investment Analysis Division offered for them to participate in investment analyses, but cited their own resource constraints as a major obstacle to full participation. While they indicated support for the investment analysis process themselves, JRC members did not believe the investment analysis process has full agency support among all agency personnel and across all offices and lines of business. JRC members were satisfied with the contribution the Investment Analysis Division makes to the investment analysis process, but would like to see improvements in communication. JRC members were particularly pleased that the Investment Analysis Division initiated this survey to determine the level of satisfaction JRC members have with various aspects of investment analysis.

Based on interview responses, the Program Evaluation Division grouped comments into three categories: products, process, and the role of the Investment Analysis Division. An overview of the results of these interviews is shown in Table 3 below. Using a scale from one to ten, the Program Evaluation Division followed a process of review, discussion, and consensus to arrive at combined JRC scores for individual topics. We defined a

score of 1 through 4 as “dissatisfied, needs immediate attention,” a score of 5 through 6 as “needs improvement,” and a score of 7 through 10 as “satisfied.”

Table 3. Satisfaction Results

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❑ **Objective I: Determine the level of satisfaction JRC members have with investment analysis products.**

JRC members were satisfied with investment analysis reports although they were dissatisfied with the affordability synopsis included in these reports. They were satisfied with briefings presented prior to investment decision meetings.

Investment Analysis Reports: Satisfied (score = 7)

JRC members were generally satisfied with investment analysis reports, although they identified several areas where improvements would be beneficial. Investment Analysis Reports were perceived as credible and objective, reflecting rigor in the investment analysis process. They were incomplete, however, because they did not include the full Operations & Maintenance funding requirements for life cycle funding, did not clearly identify all assumptions and risks, did not define intangible benefits well, and did not explore alternatives fully. In addition, JRC members would like to see different methods for conducting investment analysis in addition to cost-benefit. These areas are discussed further in the paragraphs below.

- ***Life cycle costing.*** JRC members considered investment analysis reports to be incomplete because they did not fully capture life cycle funding requirements, including both Facilities and Equipment funding and Operations and Maintenance funding. JRC members identified life cycle costing as a critical issue. Investment analysis has typically captured Facilities and Equipment funding adequately, but not Operations and Maintenance funding. This makes it impossible to have a full grasp of the investment involved. Several JRC members acknowledged that there were improvements being made in this area, but at this time life cycle funding is still not adequately addressed.
- ***Assumptions and risks.*** JRC members did not believe key assumptions were listed or risks were clearly defined in the investment analysis products. JRC members agreed that assumptions and risks need to be visible. Not only do JRC members need to know what those assumptions are, they need to have concurrence among themselves and from industry that the fundamental assumptions are correct. They need to be comfortable that the assumptions made are reasonable. In addition, they need to know the risk involved if the assumptions are not correct. The assumptions become a basis for risk. JRC members need to know the assumptions, the confidence level that the assumptions are correct, and the risks involved if those assumptions are not correct. JRC members recommended that the Investment Analysis Division start building a track record to see how accurate investment analysis assumptions have been.
- ***Intangible benefits.*** While JRC members were satisfied with how tangible benefits are identified, they were not comfortable with how intangible benefits are defined. For example, the Investment Analysis Division was credited with providing products that were very detailed and complete in quantifying efficiency improvements, but they were criticized for not quantifying other benefits, such as safety, in a meaningful way. Future benefits and benefits in the infrastructure were not allocated in a systematic process acceptable to all JRC members. There was at least one concern that too many benefits were tied to the value of time, and that this time value was measured inconsistently. There were also concerns about overlapping claims on benefits with multiple programs claiming the same benefit. There was not consensus on how these intangible benefits should be defined, but there was agreement that the current methods were inadequate.
- ***Alternatives.*** Some JRC members expressed concern that alternatives were narrowed rapidly and procedural enhancements were not fully explored. Some less obvious solutions may not have been considered at all. JRC members agreed the presentation of alternatives clearly

focused on one “best” solution. There were no real options presented that would generate serious consideration. There was a tendency for the analysis to support the preferred decision and for the presentation to oversell that preferred solution while underselling other options. JRC members had a sense that they were sometimes forced into a reluctant decision because it was the best option presented.

- ***Cost-benefit.*** Some JRC members expressed concern that the Investment Analysis Division focuses on cost-benefit to the exclusion of other types of analysis. JRC members also had concerns with how the cost and benefit elements are measured. Besides overlapping claims on benefits with multiple programs, it is not always clear where one cost ends and another begins. In addition, one JRC member was particularly concerned with how the investment analysis captures industry costs. There is not a clear understanding of the costs the aviation community will have to bear when programs are implemented. The investment analysis was described as a comparison of industry benefits versus FAA costs. No one suggested eliminating cost-benefit analysis, but JRC members would like to see other types of analyses in addition to cost-benefit, including more qualitative analyses, cost-effectiveness studies, cost avoidance, and analysis measuring how well the benefits meet the requirements.

In addition, JRC members mentioned that investment analysis reports could be improved by reducing the number of unfamiliar acronyms and standardizing the documents within the package. At least one JRC member said it would be good to have an overview document at the executive level. They did agree that as the investment analysis process has become more rigorous, there has been more consistency in the product. JRC members generally agreed that the information provided was not excessive. There were several concerns, however, that the investment analysis packages presented at the decision meeting were not always the same as the packages distributed prior to the meeting.

Affordability Synopsis in Reports: Dissatisfied, Needs Immediate Attention (score = 1)

Nearly all of the JRC members expressed dissatisfaction with the information they receive on affordability and prioritization. The most common concerns among all JRC members were focused on information provided from the affordability analysis. JRC members believed there was a rationale and method for determining prioritization and affordability but complained that they do not see the products explaining this rationale and methodology. The information is filtered. They are only able to see what is affordable in the short run. They were concerned that investment analysis is not well integrated into the budget and Systems Engineering/Operational Analysis Team (SEOAT) affordability assessment process. They were also concerned that some programs circumvented the SEOAT affordability assessment process.

In addition, JRC members said there is no mechanism to see the impact of the decision for one program on future programs. Investment analysis is completed and reported on a project-by-project basis, and JRC members are making project specific decisions. All programs compete for the same dollars. JRC members are making decisions about which programs will get those dollars, but they cannot see the priority among the programs. They are concerned that investment decisions are fundamentally flawed when programs are considered in isolation. They are unable to measure the impact to the customer and the impact on services.

JRC members could not make corporate level decisions that reflected the priorities of the agency without a full understanding of how one project would impact all other projects and programs. They firmly believe they need to know the inter-relationships and dependencies among programs. They must know how projects interweave and overlap and how they affect other linked programs when making the investment decision. Several JRC members suggested that an initiative known as Portfolio Management may help to alleviate this problem.

Briefings Prior to JRC Meetings: Satisfied (score = 8)

JRC members were very satisfied with the briefings provided prior to investment decision meetings. These pre-briefs provided a good opportunity to discuss information from the investment analysis. This allowed JRC members to ask questions and resolve issues prior to the investment decision. Several JRC members indicated the pre-brief provided the best information and allowed the offices and lines of business to be more informed at the investment decision meeting. While pre-briefs were not always necessary, they were always helpful. Pre-briefs increased the comfort level of JRC members with the investment analysis and with the investment decision itself.

Pre-briefs, when given, were well received, but both sponsoring and non-sponsoring offices and lines of business reported that pre-briefs were not consistently offered. While JRC members did not need a pre-brief for every investment analysis, they did say they would like to have them for projects that are complex or have high visibility.

❑ Objective II: Determine the level of satisfaction JRC members have with the investment analysis process.

JRC members were satisfied with the opportunity to be involved in the investment analysis process, but reported they did not have adequate resources to participate as fully as they may like. They were dissatisfied with the length of time it takes to complete an investment analysis, and they wanted to have investment analysis reports and packages delivered at least seven days prior to the investment decision meeting. JRC members agreed that the decision options presented did not reflect a variety of choices. They also agreed that investment analysis does not have the full support of all personnel across the agency.

Opportunity for Involvement in the Investment Analysis: Satisfied (score = 9)

With the exception of one, JRC members were satisfied that they had the opportunity to be fully involved in the investment analysis process, including making the actual investment decision, conducting the investment analysis, and determining the scope and priority of the investment analysis. Sponsoring offices and lines of business tended to be involved with projects they sponsored only. None of the offices or lines of business were heavily involved in projects they did not sponsor.

Availability of Resources for Involvement in Investment Analysis: Needs Improvement (score = 5)

Generally, JRC members were afforded the opportunity to be involved in the investment analysis, which was important to them, but they did not have the resources. Non-sponsoring offices and lines of business did think, however, that they could be kept better informed as the process moved through its cycle even though they were not fully involved. Although offices and lines of business reported that resources were scarce, JRC members were not always confident that the Investment Analysis Division was aware of specific skills or resources the various offices and lines of business had to offer the investment analysis effort. For example, there are resources in the Office of Aviation Policy and Plans who are accustomed to doing cost-benefit analysis, and the Office of System Safety has expertise in the area of risk assessment and safety risk management as called for by Agency Order 8040.4. Even though some JRC members would like to see more participation from the product team, they cited resource constraints as the primary impediment to full participation. Every JRC member reported budget and resource limitations.

Timeliness of the Investment Analysis: Dissatisfied, Needs Immediate Attention (score = 4)

None of the JRC members expressed complete satisfaction with the current timeliness of conducting investment analysis. Sponsoring offices and lines of business tended to be more dissatisfied with the length of time it takes to complete an investment analysis than non-sponsoring offices and lines of business. Common complaints were that the work is not scaled for the particular program or circumstance. For example, programs mandated by Congress received the same level of effort in the investment analysis process as other programs even though the commitment to go forward had already been made. JRC members did not believe there was sufficient flexibility in the investment analysis process. Many said there should be more flexibility to allow for a shorter investment analysis based on the scope of the project and the particular circumstances. There should also be a clear definition of when an investment analysis is necessary and a reasonable basis for determining the level of resources to devote to an investment analysis.

In an effort to improve the timeliness in completing investment analysis, the Investment Analysis Division began testing a pilot program to conduct rapid investment analysis using a core team for 30 days. The Power Systems program began this process in February, and the National airspace system Infrastructure Management System (NIMS) program began the process in March. The analysis under this concept is geared to a

higher level than in the past. Prior to the implementation of this trial period, both sponsoring and non-sponsoring JRC members were encouraged by this move, but they remained skeptical that the high quality of staff required could be dedicated exclusively to this effort for 30 days.

Even though timeliness was a concern, JRC members were not willing to sacrifice quality in the investment analysis effort for the sake of speed. They would like to see the time decreased, but not at the expense of quality. Particularly for significant agency investments, the Investment Analysis Division should take the time necessary.

Timeliness of Distributing Investment Analysis Reports: Needs Improvement (score = 5)

Several JRC members were concerned that they are receiving investment analysis packages just one to three days before the investment decision meeting. This does not afford them the opportunity to review the material adequately. They would like to receive the investment analysis package at least seven calendar days before the investment decision meeting. In addition, this advance package needs to reflect the information presented at the investment meeting accurately. JRC members believe the documents need to be in place prior to the investment decision meeting. If the investment analysis is not ready, the decision meeting should be postponed or delayed unless there is a dire need that must be met quickly.

Decision Options: Needs Improvement (score = 5)

JRC members generally agreed that they did have a choice in the investment decision. However, that choice was usually a go/no go decision or a choice of funding all, some, or none of the project. JRC members stated that an investment decision meeting would not be scheduled unless there was already consensus to go forward with the project. JRC members agreed that the preferred solution was generally obvious, with no close second option to consider. One JRC member said it appears the investment analysis team believes its objective at the investment meeting is to get approval for the preferred alternative rather than to present various options for consideration. Another JRC member reported that there was sometimes a sense of being forced into a reluctant decision. At least one JRC member stated that the preferred alternative was decided early and the investment analysis was merely a documenting procedure.

Sponsoring offices and lines of business tended to be more satisfied with the choice available at the investment decision meeting than non-sponsoring JRC members. Non-sponsoring JRC members were more likely to have a sense of being forced into a decision. Although the sponsoring offices and lines of business were not convinced having a choice was critical, both sponsoring and non-sponsoring JRC members believed having a choice was important. Most JRC members, however, insisted on having a choice, even if that choice was effectively limited to a go/no go decision or an all/some/none selection.

Agency Support: Needs Improvement (score = 5)

While the JRC members agreed that investment analysis is critical and provides credibility through objective analysis, they admitted there was not uniform support of the investment analysis process throughout the agency. While the concept is supported at the associate administrator level, the implementation has not been fully supported. JRC members did not find there was commitment across all offices and lines of business to analyze their own projects objectively. They acknowledged passive resistance to the process, commenting on tension between project managers, whose job is to get the project underway, and the investment analysis staff, who believes an investment analysis is necessary. They recognized that Integrated Product Teams found investment analysis to be a source of frustration. Sponsoring offices and lines of business had received complaints from Integrated Product Teams that the investment analysis process delayed solution implementation without adding value. JRC members reported that Integrated Product Teams would prefer investment analysis to be less intrusive. One line of business expressed dissatisfaction that the investment analysis team usurped the decision-making authority for that line of business. JRC members also reported that when the Integrated Product Team already had a solution in mind, the review of alternatives tended to be considered excessive and wasteful. Even so, JRC members believe investment analysis is gaining acceptance. One JRC member suggested the investment analysis function should be at a higher level within the FAA structure, reporting directly to the JRC or to the Administrator to ensure its independence.

❑ **Objective III: Determine the level of satisfaction JRC members have with the role the Investment Analysis Division performs in conducting the investment analysis and developing the investment analysis products.**

JRC members were satisfied with the contribution of the Investment Analysis Division in performing investment analysis and developing investment analysis products, but would like to see improvements in communications.

Investment Analysis Division Contribution: Satisfied (score = 7)

JRC members were generally very complimentary about the role of the Investment Analysis Division in conducting investment analysis. Non-sponsoring offices and lines of business identified the Investment Analysis Division as the essential piece to the investment analysis process. Sponsoring offices and lines of business credited them with bringing technical expertise in both format and content. Both gave them credit for maintaining a high level of rigor in the investment analysis process and for providing objectivity and credibility to the final products. JRC members agreed that the investment analysis staff has strong analytical skills coupled with a goal to do the right thing. In addition, JRC members agreed the investment analysis process and products provide support to the program effort, both within the agency and to others. They believe

investment analysis provides a safety net for the agency when making investment decisions.

Even though JRC members were satisfied with the contribution of the Investment Analysis Division, there were improvements they would like to see. JRC members recommended adding more creative thinking to the process. They would like the Investment Analysis Division to look at different ways to do investment analysis in addition to cost-benefit. There were concerns about the way benefits were captured in the investment analysis. Some intangible benefits, such as safety, were not adequately pursued while others, such as passenger time, were given excessive weight in the analysis. In addition, there were questions about how costs were identified, particularly where one cost ends and another begins. These and other issues, including identifying assumptions and risks, capturing full life cycle costs, and increasing the timeliness of the investment analysis effort are covered in other sections of this report.

JRC members were pleased that the Investment Analysis Division is trying to improve investment analysis and that it is open to suggestions. JRC members were particularly pleased that the Investment Analysis Division initiated this independent survey to measure the level of satisfaction JRC members have with the investment analysis process and products.

Investment Analysis Division Communication: Needs Improvement (score = 5)

JRC members complimented the Investment Analysis Division on its efforts to get early industry involvement. However, JRC members wanted the Investment Analysis Division to improve communications with stakeholders and others during the investment analysis. They were particularly concerned that Integrated Product Team connections and sponsor representatives be kept informed. One JRC member reported frustration with the length of time required to establish the investment analysis team without adequate explanation to the sponsoring line of business. They were further upset when offices and lines of business changed their representatives, without explanation, after the team was finally established. JRC members also reported a sense of defensiveness on the part of the Investment Analysis Division when questions were asked during investment decision meetings. There was the perception that the investment decision meetings were convened to approve the decision, not to listen and decide whether the decision should be approved.

One JRC member was concerned that the Investment Analysis Division may not be maintaining communication with the Architecture and Systems Engineering Office, ASD-100, to ensure the investment analysis is in line with the vision for the agency. Others identified a need for better coordination between the requirements effort and the investment analysis effort. A weak link was also identified between the investment analysis process and the budget process. In addition, JRC members said they needed more discussions earlier on the assumptions and the variables.

To improve communications, JRC members suggested that stakeholders could be provided an update briefing at the mid-point. JRC members also suggested the Office of

Management and Budget (OMB) and Congress might benefit from an update at this point. JRC members would like to be kept apprised on the status of investment analysis for programs they sponsor. In addition, JRC members would like to have a status report identifying which investment analyses are in process, which are on the schedule, and which are waiting to be scheduled.

III. INVESTMENT ANALYSIS TRACKING GOALS

In an effort to measure of customer satisfaction, the Investment Analysis Division developed six operational investment analysis goals.

- 1) Organizational Involvement: *Appropriate organizations are involved in each investment analysis.*
- 2) Alternatives: *A sufficient number of alternatives are considered to make informed corporate decisions.*
- 3) Resolution of Issues: *Issues associated with each investment analysis are identified, addressed, and resolved.*
- 4) Quality: *The investment analyses are unbiased, and reflect valid data, solid analytical practices, and fair evaluation of risks.*
- 5) Timeliness: *The investment analyses are completed within a suitable time frame.*
- 6) Value Added: *Investment analyses make corporate decision-making more effective.*

To measure perceived achievement of the goals, the Investment Analysis Division applied a one-to-five scale for degree of satisfaction. This rating form, which is shown in Appendix B, will be used by the Investment Analysis Division to measure its progress in meeting these goals as it makes changes to the investment analysis process and products.

To develop the initial rating measures, the Program Evaluation Division asked JRC members to rate each of the six goals at the conclusion of the interview. This rating form was not part of the formal interview process measuring the level of satisfaction JRC members have with investment analysis products, process, or the role of the Investment Analysis Division. Rather, it was a separate element for the benefit of the Investment Analysis Division to track its progress in meeting specific goals. The results from this rating form are shown separately in this section.

These ratings were obtained during the period January 4 through February 7, 2000. The ratings ranged from a low score of *one* for “strongly disagree” to a high score of *five* for “strongly agree.”

The average ratings for each office or line of business were combined to reflect (1) an overall rating for all participating JRC members, (2) a rating for sponsoring offices or lines of business only, and (3) a rating for non-sponsoring offices or lines of business only. Ratings for the performing line of business were averaged with the overall ratings but are not shown separately.

Sponsoring offices and lines of business were identified as:

AIO Assistant Administrator for the Office of Information Services/Chief Information Officer

ACS Associate Administrator for Civil Aviation Security

AVR Associate Administrator for Regulation and Certification

ATS Associate Administrator for Air Traffic Services

Non-sponsoring offices and lines of business were identified as:

ASY Assistant Administrator for the Office of System Safety

AGC Chief Counsel, Office of the Chief Counsel

ABA Assistant Administrator for Financial Services/Chief Financial Officer

AST Associate Administrator for Commercial Space Transportation

ARP Associate Administrator for Airports

API Assistant Administrator for Policy, Planning, and International Aviation

The performing line of business was identified as:

ARA Associate Administrator for Research and Acquisitions

The results from these ratings are shown in the Rating Results for Investment Analysis Goals, Table 4, below. These ratings reflect responses as of February 15, 2000.

Table 4. Rating Results for Investment Analysis Goals

Goal Measured	All Participating JRC Members	Sponsors Only	Non-sponsors Only
Organizational Involvement	3.50	3.67	3.50
Alternatives	2.42	1.67	2.56
Resolution of Issues	2.83	2.83	2.60
Quality	3.66	3.67	3.70
Timeliness	2.86	2.50	3.04
Value Added	4.06	4.00	4.30

1 = strongly disagree

2 = disagree

3 = neutral

4 = agree

5 = strongly agree

Based on this rating scale, scores above 3.0 were considered “satisfied” and scores below 3.0 were considered “dissatisfied.” JRC members were satisfied with organizational involvement, quality, and value added. They were dissatisfied with alternatives and resolution of issues. Sponsoring offices and lines of business were dissatisfied with timeliness.

For future rating forms, JRC members recommended adding a goal for *relevance*, to see if the right programs were going through investment analysis, and a second goal for *quality* to get a rating on programs that do not fit the investment analysis mold. Most JRC members were comfortable with the six goal areas selected to measure. At least one member, however, said these were the wrong goals, and another said these goals were not sufficiently specific.

IV. APPENDICES

Interview Questions

Joint Resources Council (JRC) Survey Questions

NOTE: These survey questions were developed by the Investment Analysis Division with guidance from the Program Evaluation Division.

1. Does the information you get during the Investment Analysis phase help you make *corporate-level* decisions that reflect the priorities of the agency?
2. Do you feel the information you get from Investment Analysis is complete? If it is not complete, what is missing or what would you like to see included? Are you getting too much information?
3. Do you feel all alternatives included in JRC packages are given fair treatment? Are you presented with a real choice? Do you feel you need to be presented with a real choice?
4. Do you feel investment analysis is conducted in an appropriate amount of time and at an appropriate pace?
5. Do you feel that you or your line of business has sufficient involvement in:
 - Making the actual investment decision for programs *you sponsor*? What about for programs that you *do not sponsor*?
 - Conducting the Investment Analysis for programs that *you sponsor*? What about for programs you *do not sponsor*? Do you feel it was sufficient in both cases? Do you feel you have the necessary resources to devote to the process?
 - Determining the priority and scope of the Investment Analysis for programs you *sponsor*? What about for programs that you *don't sponsor*? Do you feel it has been sufficient in both cases?
6. You have received products, pre-briefs, and briefs that were developed by teams under the leadership of the Investment Analysis Division, and you've seen formal presentations at Investment Decision. What is your assessment of the Investment Analysis Division's contribution to the investment analysis effort? If you were the director of the Investment Analysis Division, what three things would you continue or emphasize regarding the products or process? What three things would you change about the products or process?

7. What value do you feel Investment Analysis provides to the agency or to you right now? What value *should* Investment Analysis provide to the agency or to you that it doesn't provide at this point?
8. Do you feel that the agency fully supports Investment Analysis? What are the most important actions required to improve investment analysis, including actions by the JRC, the Office of System Architecture and Investment Analysis (ASD), Integrated Product Teams (IPT), and Sponsor.
9. What other concerns do you have?
10. We have a quick survey of six attributes pertaining to investment analysis. Please rate them from 1-5, with 5 being Strongly Agree, 4 being Agree, 3 being Neutral, 2 being Disagree, and 1 being Strongly Disagree.
11. The Investment Analysis Division would like to survey its customers periodically. Can you suggest additional items that would measure the level of satisfaction with the Investment Analysis Division?

Source of questions: Investment Analysis Division, ASD-400

Appendix B: Investment Analysis Tracking Goals Rating Form

Investment Analysis Tracking Goals – Rating Form

The form shown in Table 5 below reflects the tracking goals developed by the Investment Analysis Division. This form was given to JRC members to fill out at the conclusion of each interview.

Table 5. Investment Analysis Tracking Goals – Rating Form

Goal	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	Comments
Organizational Involvement: <i>Appropriate organizations are involved in each investment analysis.</i>						
Alternatives: <i>A sufficient number of alternatives are considered to make informed corporate decisions.</i>						
Resolution of Issues: <i>Issues associated with each investment analysis are identified, addressed, and resolved.</i>						
Quality: <i>The investment analyses are unbiased and reflect valid data, solid analytical practices, and fair evaluation of risks.</i>						
Timeliness: <i>The investment analyses are completed within a suitable time frame.</i>						
Value Added: <i>Investment analyses make corporate decision-making more effective.</i>						

Appendix C: Joint Resources Council Members

JRC Members

Table 6 below shows the 11 offices and lines of business that are members of the Joint Resources Council.

Table 6. JRC Members

Routing Symbol	Office or Line of Business
ATS	Associate Administrator for Air Traffic Services
AVR	Associate Administrator for Regulation and Certification
ARP	Associate Administrator for Airports
ARA	Associate Administrator for Research and Acquisitions*
AST	Associate Administrator for Commercial Space Transportation
ACS	Associate Administrator for Civil Aviation Security
ASY	Assistant Administrator for the Office of System Safety
AIO	Assistant Administrator for the Office of Information Services/Chief Information Officer
ABA	Assistant Administrator for Financial Services/Chief Financial Officer
API	Assistant Administrator for Policy, Planning, and International Aviation
AGC	Chief Counsel, Office of Chief Counsel

*Serves as the FAA Acquisition Executive

Appendix D: Interview Participants

Interview Participants

The following participants, shown in Table 7 below, represented the Joint Resources Council (JRC) members during the interview process.

Table 7. Interview Participant List

Routing Symbol	Office or Line of Business	Interview Participant
ATS	Air Traffic Services	Steven J. Brown, Associate Administrator (acting); Peter H. Challan, Deputy Associate Administrator
AVR	Regulation and Certification	Thomas E. McSweeney, Associate Administrator; Michael Flores, AFS-430, Management and Program Analyst, AVR SAT Representative
ARP	Airports	James R. White, Deputy Director, Office of Airport Safety and Standards
ARA	Research and Acquisitions	Steven Zaidman, Associate Administrator
AST	Commercial Space Transportation	Joseph A. Hawkins, Deputy Associate Administrator; D.J. Stadtler, AST-4, Management and Program Analyst
ACS	Civil Aviation Security	Quentin Johnson, Deputy Director, Office of Civil Aviation Security Policy and Planning; Jacqueline Baker, ACP-300, Manager, FAA Security Division
ASY	Office of System Safety	Barry Bermingham, Deputy Assistant Administrator; Robert D. Balderston, System Safety Risk Management, Team Lead; Wes Timmons, Computer Scientist, Lead
AIO	Office of Information Services/CIO	Arthur Pyster, Deputy Assistant Administrator
ABA	Financial Services/CFO	Donna McLean, Assistant Administrator/Chief Financial Officer; John F. Hennigan, Deputy Assistant Administrator; Charles E. Martin, Jr., Manager, Capital Budget Division
API*	Policy, Planning, and International Aviation	Patricia A. McNall, Deputy Assistant Administrator (acting) <i>at the time of the interview</i>
AGC*	Office of Chief Counsel	Patricia A. McNall, Assistant Chief Counsel, Procurement Law Division

**There was one interview for API and AGC combined.*

Acronyms

ABA	Assistant Administrator for Financial Services/Chief Financial Officer
ACM-10	Program Evaluation Division
ACS	Associate Administrator for Civil Aviation Security
AGC	Office of the Chief Counsel
AIO	Office of Information Services/Chief Information Officer
API	Assistant Administrator for Policy, Planning, and International Aviation
ARA	Associate Administrator for Research and Acquisitions
ARP	Associate Administrator for Airports
ASD	Office of System Architecture and Investment Analysis
ASD-400	Investment Analysis and Operations Research Division
AST	Associate Administrator for Commercial Space Transportation
ASY	Office of System Safety
ATS	Associate Administrator for Air Traffic Services
AVR	Associate Administrator for Regulation and Certification
CFO	Chief Financial Officer
CIO	Chief Information Officer
FAA	Federal Aviation Administration
JRC	Joint Resources Council
NIMS	National airspace system Infrastructure Management System
OMB	Office of Management and Budget
SEOAT	Systems Engineering/Operational Analysis Team